

TANK BOTTOM DIAPHRAGM VALVE

Manual or Pneumatically Actuated Vessel Outlet Valve

Tank bottom diaphragm valves are sterile vessel outlet valves. They are designed for use at the bottom of vessels to enable draining of process fluids while minimizing dead leg to prevent waste entrapment and contamination from bacteria or microorganisms.

SPECIFICATIONS AND FEATURES*

Connection Size:

- » Standard Valve: 1/2" - 4" (DN15 - DN100)

Outlet Connection Type:

- » Standard Valve: Tri-clamp, Extended Tube End

Additional Ports or Tandem Access Valve:

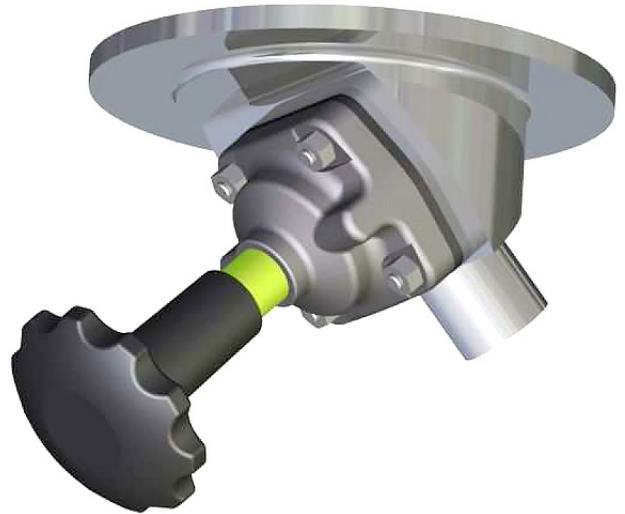
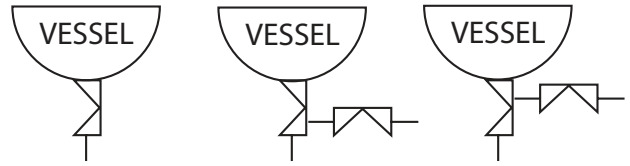
- » As special Option

Materials:

- » Standard: Barstock, ASME SA479 316L (UNS 31603) or EN 10272:2000 GR 1.4435
- » Optional: AL-6XN®, Hastelloy® C-22 and others readily available

Surface Finish:

- » Wetted Interior:
 - Standard:
 - ASME BPE SF1, 20 Ra μm (0,5 Ra μm)
 - ASME BPE SF5, 20 Ra μm (0,5 Ra μm) Electropolish
 - Optional:
 - ASME BPE SF4, 15 Ra μm (0,4 Ra μm) Electropolish. Better finish upon request.
- » Exterior:
 - Optional: 40 Ra μm (1,0 Ra μm) and better upon request



APPLICATIONS

Manual or Air Actuated Outlet Valve for sterile vessel

- » Upstream:
 - Bioreactor/Fermenter: vessels
 - Perfused Bioreactors: Retentate or permeate vessels
- » Downstream:
 - Outlet valve for process vessels in the following production areas:
 - Separation
 - Filtration
 - Chromatography
 - Formulation
 - Fill Finish

* See page 4 & 5 for GENERAL FEATURES and GENERAL SPECIFICATIONS regarding features and specifications that apply to all valves

BONNET / ACTUATOR SPECIFICATIONS

Manual Bonnet Assembly:

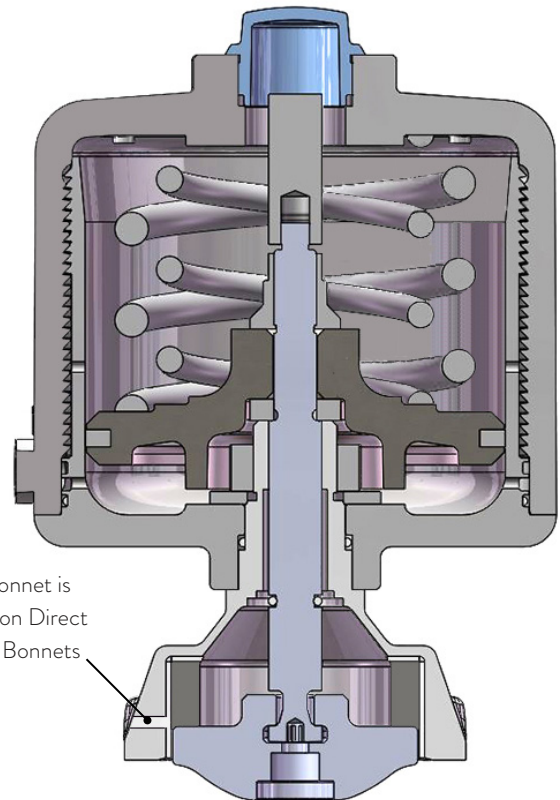
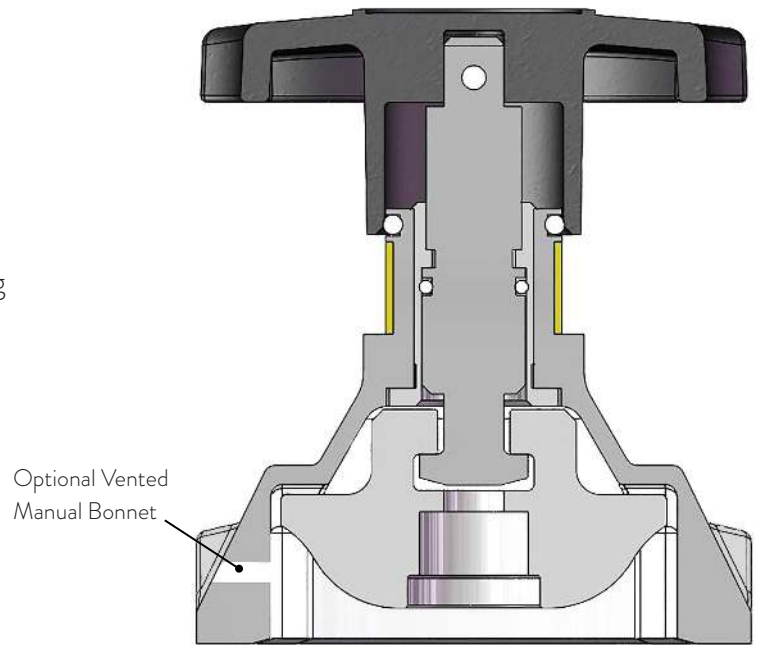
- » Available for sizes: 1/2" - 4" (DN15 - DN100)
- » Closing Stop: adjustable
- » Bright visual position indicator
- » Options: contact factory for proximity switches, locking devices and stroke limiter

Bonnet Materials

- » Bonnet: electropolished Stainless Steel
- » Compressor: Stainless Steel
- » Insert: brass
- » Thrust Washer: PTFE
- » Compressor Pin: Stainless Steel
- » Indicator: Polyolefin
- » Stem: Stainless Steel
- » Handwheel: PPS (1/4" - 2") (DN8 - DN50); Stainless Steel (2-1/2" - 4") (DN65 - DN100)

Air Actuated Bonnets:

- » Available for sizes: 1/2" - 2" (DN15 - DN50) standard; 3" & 4" (DN80 & DN100) optional
- » Air Actuator Materials: Polyamide, Stainless Steel, Stainless Steel base standard for all configurations
- » Actuator Seal: Actuator springs and seals can be replaced without exposing process
- » Orientation: Swivel feature allows 360° orientation of air inlet
- » Air Connections: NPT Stainless Steel base standard for all configurations
- » Function: Change from Normally Open or Normally Closed by inverting the actuator housing
- » Control System Interface: Available with optional switch packages for on/off control or with positioners for flow control and modulation

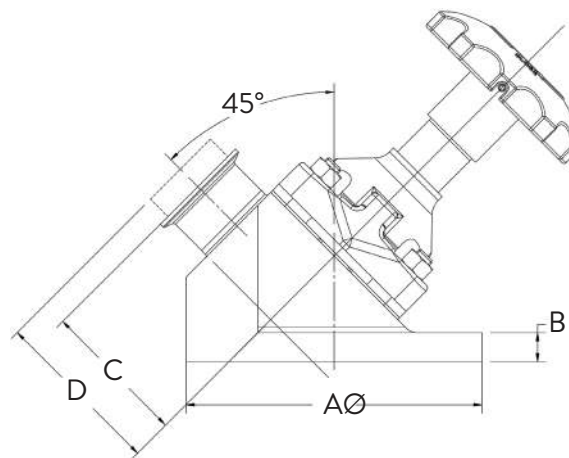


DIMENSIONS (TANK BOTTOM DIAPHRAGM VALVE)

INCHES				
SIZE	AØ	B	C	D
1/2"	3.0	0.5	According to BPE or as specified	
3/4"	3.5	0.5		
1"	4.5	0.5		
1-1/2"	5.5	0.56		
2"	7.0	0.5		
2-1/2"	9.0	0.75		
3"	10.0	0.75		
4"	14.0	1.0		

METRIC				
SIZE	A	B	C	D
DN15	76,2	12,7	According to BPE or as specified	
DN20	88,9	12,7		
DN32	114,3	12,7		
DN40	139,7	14,2		
DN50	177,8	12,7		
DN65	228,6	19,1		
DN80	254,0	19,1		
DN100	355,6	25,4		

1/2" - 4" (DN15-DN100)



Please Contact Factory for special vessel connection sizes or valve configurations. All queries are welcome.

ORDERING SCHEMATIC (TANK BOTTOM DIAPHRAGM VALVE)

MODEL	TYPE	SIZE	CONN.	FINISH	ACTUATION	DIAPHRAGM	ACC'Y	COMP.
SV								

1	TYPE
6	Tank Bottom Valve

2	SIZE
4	1/2"
5	3/4"
6	1"
7	1-1/2"
8	2"
9	2-1/2"
A	3"
B	4"

3	CONNECTION
1	OD Tube
2	Clamp
Z	Non-standard

4	INTERNAL SURFACE FINISH
1	SF1, 20Ra µin
2	SF4 15Ra µin (0,4 Ra µm) EP
3	SF5 20Ra µin (0,5 Ra µm) EP
Z	Non-standard, consult factory

5	ACTUATION
1	Manual
2	Manual Vented
3	2 1/2" - 4" Actuator Spring to Close
4	2 1/2" - 4" Actuator Spring to Open
5	Eclipse Actuator, Double Acting (1/2" - 2" standard)
6	Eclipse Actuator, Spring to Close (1/2" - 2" standard)
7	Eclipse Actuator, Spring to Open (1/2" - 2" standard)

6	DIAPHRAGM
1	EPDM
2	TFM/EPDM
Z	Non-standard

7	ACCESSORIES
1	Switch 2 Position
2	Positioner 4-20 mA
Z	Non-standard, consult factory

8	CE/PED COMPLIANCE
OG	SEP (0.25" to 1")
OF	CE Category 1 (1-1/2" to 4")

SANITARY DIAPHRAGM VALVES

Manual or Air Actuated Forged 2-way or Cast 2-way, Ported and Tandem valves. Barstock Zero Static T-Block, Point of Use T-Block, Divert Tank Bottom and Custom Block Body valves

FEATURES

- » Body & Trim Material: traceable ASME and DIN grade of 316L and Super-Austenitic Stainless Steel and Super Alloys readily available
- » Size Range: 1/4" - 4" (DN8 - DN100)
- » Manual or Air Actuated
- » Surface Finish:
 - Wetted Interior: ASME BBE SF5 20 Ra μm (0.5 Ra μm). Electropolish standard, SF4 and better finish available
 - Exterior: See individual model specifications
- » Diaphragm: All FDA, FDA/USP <88>, <87> Class VI, ADI-TSE Free
 - TFM/EPDM Backer
 - EPDM - Peroxide Cured

DOCUMENTATION



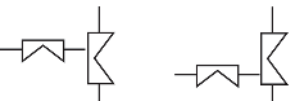
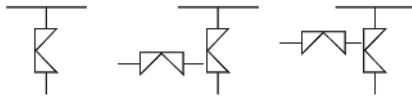
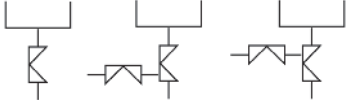
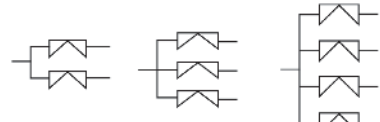

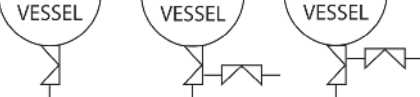
- » Steriflow Unicert; Certificate of Compliance for:
 - Material, including MTR's
 - Surface Finish
 - FDA/USP <88>, <87> Class VI
 - ADI/TSE Free cert available upon request
- » Each Unicert document lists the order's individual valve Serial/Suffix numbers and wetted component Heat numbers. MTR's for each Heat number follow on attached pages. The Serial numbers and Heat numbers are directly traceable to each individual valve
- » Valve Sizing information with quotation
- » Signed valve Leak Test report upon request

CERTIFICATION

- » CRN No.: 0C22893.5



VALVE TYPE BY APPLICATION

- » 2 - Ways 
- » Ported 
- » Tandem Access 
- » Zero Static T-Block 
- » Zero Static POU 
- » Divert Block 
- » Custom Blocks 
- » Tank Bottom 

GENERAL VALVE SPECIFICATIONS*

Line Size: 1/4" - 4" (DN8 - DN100)

End Connections: ASME BPE, DIN, ISO, Contact Factory

- » Tri-Clamp
- » Tube Weld End

Body Materials

- » Forgings: EN 10272:2000 GR 1.4435 316L standard
- » Bar Stock: ASME SA479 316L (UNS 31603) standard; EN 10272:2000 GR 1.4435, AL-6XN®, Hastelloy® C-22 and others readily available options

Diaphragm Material/Max Temperature: all diaphragms are FDA, USP <88> Class VI and <87> compliant and ADI-free

- » TFM/EPDM Backer / -14°F to 266°F (-26°C to 130°C) ≤300°F (150°C) at 50 psig (3,45 barg) max during SIP
- » EPDM Peroxide Cured / -14°F to 266°F (-26°C to 130°C) ≤300°F (150°C) at 50 psig (3,45 barg) max during SIP

Surface Finish: see individual valve specifications

Pressure at Maximum Temperature: 50 psig @ 300°F (3,45 barg @ 150°C)

Maximum Operating Pressure:

- » 1/4" - 1": 200 psi @ 100°F (13,8 bar @ 38°C)
- » 1-1/2" - 2": 175 psi @ 100°F (12,1 bar @ 38°C)
- » 2-1/2" - 4": 150 psi @ 100°F (10,3 bar @ 38°C)

Seat Leakage: ANSI FCI Class VI

FLOW COEFFICIENT CV (KV)

CONNECTION SIZE	VALVE DESCRIPTION	FLOW COEFFICIENT CV (KV)
1/4" - 1/2"	Compact valve/weir	1.16 (1,0)
1/2"	Any standard forged, barstock or cast body valve with catalog standard weir	5.2 (4,5)
3/4"		8.7 (7,52)
1"		13.9 (12,02)
1-1/2"		34.8 (30,1)
2"		59.7 (51,6)
3"		185 (160)
4"		272 (235)

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- » Closing Stop: Adjustable
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Bonnet Materials

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- » Insert: Brass
- » Thrust Washer: PTFE
- » Compressor Pin: Stainless Steel
- » Indicator: Polyolefin
- » Bushing: Brass
- » Stem: Stainless Steel
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* Most valves meet all of these general features and specifications. However, sizes may vary depending upon product selected. See individual product page for specific details about each model.